

REMARKS

Claims 1, 3-12, 14-20, and 22-25 are pending in the present application. In the Office Action of April 20, 2005, the Examiner rejected claims 1, 3-12 and 14-20 and allowed claims 22-25. In order to clarify distinguishing features and points of novelty of the claims, Applicant is amending claims 1 and 12. Applicant respectfully requests reconsideration based on the foregoing amendments and following remarks.

Rejection Under 35 USC §102

In paragraph 4, the Examiner rejected claims 1, 3-9, 12, and 14-20 as being anticipated by *Williamson et al.* (USPN 5,027,410). Specifically, the Examiner contends that all elements of the claim 1 are disclosed in Figures 8 and 9. Applicant respectfully traverses this rejection.

Filter groups of Williamson are functionally different

Claim 1 recites "digital filters arranged in at least one filter group,... wherein each filter in the filter group is configured to process a selected frequency that is progressively lower than a prior filter in the filter group *before passing the audio signal to a next filter in the filter group.*" Thus, each filter within the filter group samples and filters the signal before passing the signal to the next filter in the filter group where each successive filter is configured to process a lower frequency than the one before it. In essence, the filter group of the present application is a serial filter group.

In contrast, *Williamson et al.* does not disclose having filter groups wherein successive filters in the same filter group process a selected frequency that is

progressively lower than a prior filter before passing the audio signal to a next filter in the filter group.

The Examiner contends that “Williamson teaches in Figure 9 of a cascade filter environment having filter groups (each low pass and high pass octave filter is a group; column 9, lines 45-55).” This filter group of *Williamson*, however, is a parallel filter group. That is “the first stage of filtering divides the signal into 2 streams, one passed by a high pass filter 172 containing the upper half of the spectrum and the other passed by a low pass filter 173 containing the lower half of the spectrum.” Col. 9, ln. 16-20. Therefore, the two filters in the filter group of *Williamson* operate independent of the output of the other and the audio signal is not passed between them.

Coefficients are not shared in Williamson

Further with regards to claim 1 and 12, the Examiner contends in the Office Action that “the fact that the filters are cascaded [in *Williamson*] implies that their coefficients are shared [and further] halving the sampling frequency of each filter and to save computation time ... [means] it is inherent that the coefficients are shared.” Applicant traverses.

Just because *Williamson* merely mentions halving sampling frequency and of saving computation time does not inherently provide that the coefficients are shared. There may be other ways to save on computation time, for example, and it would not be appropriate to suppose that all those ways are inherently taught by *Williamson* in enough details to be prior art.

In order to have a proper §102 rejection, each and every element must be taught by the prior art. Merely suggesting that an element is implied or inherently

taught without any further support does not satisfy the requirements for a §102 rejection.

In fact, the disclosure and claims of *Williamson* revolve around calculating these coefficients. For example, Figure 8 and cited portions of *Williamson et al.* disclose samples 130 entering the system and being “directed to a filter bank composed of octave filters 131-135 which separate the signal” according to frequency band for processing. Col. 13, ln. 35-40. “Gain calculations are made for each band in gain calculation functions 162 to 165...Based on the gain calculations the filter coefficients are calculated.” Col. 13, ln. 46-47. Thus, the system of *Williamson et al.* must calculate the filter coefficients for each frequency band.

Further, a cursory review of the claims of *Williamson* will indicate an emphasis on the changeability of these coefficients and their calculations. For example, claim 1 of *Williamson* comprises “a digital spectral filter means, having a plurality of filter coefficients which are changeable,” and a “coefficient calculation means for calculating the coefficients of the digital spectral filter means,... the coefficients of the digital spectral filter means being periodically changed to the new coefficients calculated by the coefficient calculation means...”

Claim 1 recites, in part, having “coefficients of each filter of the filter group configured for processing more than one frequency, wherein *same coefficients are used for processing audio signals that are a factor of a frequency interval apart.*” Thus, for example, a first filter in a first filter group may share its coefficients with a first filter in a second filter group that is separate by one octave. It is quite evident that *Williamson et al.* cannot have the same coefficients used for processing audio signals from different frequency bands as the coefficients in *Williamson et al.* must be calculated separately for each frequency band.

As such, independent claims 1 and 12 are not anticipated by *Williamson et al.* Further, since claims 3-9 depend from claim 1 and claims 14-20 depend from claim 12, these dependent claims also are not anticipated by *Williamson et al.*

Rejection under USC §103

In the first line of paragraph 6, the Examiner rejected claims 10 and 11 as being unpatentable over *Williamson et al.* in view of *Yassaie et al.* (USPN 4,920,508). The remainder of the paragraph, however, discusses *Nakayama* instead of *Yassaie et al.* For completeness of this response, Applicants will assume the Examiner means *Yassaie et al.* throughout this paragraph. As such, Applicant respectfully traverses this rejection.

As shown above, *Williamson et al.* does not disclose the use of filter groups having similar functionality or sharing of coefficients between filters. The addition of *Yassaie et al.* does not cure the deficiencies in *Williamson et al.* To establish a *prima facie* case of obviousness requires all the claim limitations to be taught or suggested by the prior art. *In re Royka*, 490 F.3d 981 (CCPA 1974). As the combination of *Williamson et al.* and *Yassaie et al.* fails to teach each and every limitation of the claimed invention, claims 10 and 11, which both depend from claim 1, are not obvious over *Williamson et al.* in view of *Yassaie et al.*

Allowable Subject Matter

In paragraph 7, the Examiner found claims 22-25 allowable. In doing so, the Examiner stated that claims 23-25 are allowable due to dependency on claim 22. Applicant points out, however, that claim 23 depends from claim 1 and claim 24

depends from claim 12. Applicant contends that claims 23 and 24 are allowable for the same reasons as provided above with respect to claims 1 and 12.

Conclusion

Based on the foregoing amendments and remarks, Applicant believes the rejections to the claims have been overcome, and that the present application is in condition for allowance. If the Examiner has any questions regarding the case, the Examiner is invited to contact Applicant's undersigned representative.

Respectfully submitted,

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